

CLAIMS:

1. A three-dimensional spatial filtering apparatus for conducting filtering on a three-dimensional image by a three-dimensional spatial filter, comprising:
 - a coefficient adapting device for changing coefficients of said three-dimensional spatial filter according to a property of a pixel value in said three-dimensional image.
2. The three-dimensional spatial filtering apparatus of claim 1, wherein said property is a pixel value of a pixel-of-interest in the three-dimensional image convoluted with the filter.
3. The three-dimensional spatial filtering apparatus of claim 1, wherein said property is an average value of pixel values of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels.
4. The three-dimensional spatial filtering apparatus of claim 1, wherein said property is a maximum value of pixel values of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels.
5. The three-dimensional spatial filtering apparatus of claim 1, wherein said property is a minimum value of pixel values of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels.
6. The three-dimensional spatial filtering apparatus of claim 1, wherein said property is a median value of pixel values of the pixel-of-interest in

the three-dimensional image convoluted with the filter and its neighboring pixels.

7. The three-dimensional spatial filtering apparatus of claim 1,
5 wherein said property is a maximum value of absolute values of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

8. The three-dimensional spatial filtering apparatus of claim 1,
10 wherein said property is a maximum value of squares of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

9. The three-dimensional spatial filtering apparatus of claim 1,
15 wherein said property is a minimum value of absolute values of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

10. The three-dimensional spatial filtering apparatus of claim 1,
20 wherein said property is a minimum value of squares of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

11. The three-dimensional spatial filtering apparatus of claim 1,
25 wherein said property is a median value of absolute values of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

12. The three-dimensional spatial filtering apparatus of claim 1,
30 wherein said property is a median value of squares of differences between a pixel

value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels.

13. The three-dimensional spatial filtering apparatus of claim 1,
5 wherein the coefficients of the three-dimensional spatial filter are adapted depending upon, as said property, a property of a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter or its neighboring pixels.

10 14. The three-dimensional spatial filtering apparatus of claim 13, wherein a standard deviation of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels is employed as an indicator of said property.

15 15. The three-dimensional spatial filtering apparatus of claim 13, wherein a sum of absolute values of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels is employed as an indicator of said property.

20 16. The three-dimensional spatial filtering apparatus of claim 13, wherein a square sum of differences between a pixel value of the pixel-of-interest in the three-dimensional image convoluted with the filter and pixel values of its neighboring pixels is employed as an indicator of said property.

25 17. A three-dimensional spatial filtering method for conducting filtering on a three-dimensional image by a three-dimensional spatial filter, comprising the step of:

adapting coefficients of said three-dimensional spatial filter according to a
30 property of a pixel value in said three-dimensional image.

18. The three-dimensional spatial filtering method of claim 17, wherein said property is a pixel value of a pixel-of-interest in the three-dimensional image convoluted with the filter.

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19. The three-dimensional spatial filtering method of claim 17, wherein said property is an average value of pixel values of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels.

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20. The three-dimensional spatial filtering method of claim 17, wherein said property is a maximum value of pixel values of the pixel-of-interest in the three-dimensional image convoluted with the filter and its neighboring pixels.

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